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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/618,186

07/10/2003

Shlomo Rakib

034704-000006

4298

7590

02/20/2007

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EXAMINER

LU, JIA

ART UNIT

PAPER NUMBER

2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/20/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/618,186

Applicant(s)

RAKIB ET AL.

Examiner

Jia Lu

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Response to Arguments***

1. Applicant's amendments with respect to claims 1, 5, 9, 12, 13 have been considered but are rejected in view of the new ground(s) presented below.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 5, 9, 12, 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Amended parts of claims 1, 5, 9, 12, 13 recite a multiplexer to receive a first plurality of channels streams from a system, and modulator circuits to receive that same plurality of channel streams. This suggests that the modulators receive the same plurality and number of channel streams that the multiplexer receives. However, the specification (publication paragraph 0018) describes the multiplexer to map a first set of data streams onto a different number of output channels, which the modulators subsequently receive. That suggests that the modulators do not receive the same plurality and number of channel streams that the multiplexer receives.

3. The following rejections are made relying on the specification disclosures.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patrik Eriksson in US Patent 6,570,929, in view of Osamu Aso et al in US application publication 2003/0048503 A1.

- a. Regarding claims 1 and 2, Eriksson shows a system outputting a signal from a first plurality of channel streams at digital format (figure 1), the system comprising a plurality of modulators ( "mod" and "multi") each producing a digital upconverted signal, a summer circuit (element 120), a DAC (element 120), and upconverter (column 1, lines 60-65) . While Eriksson does not show a multiplexer configured to receive and distribute a first plurality of channel streams and a plurality of modulators to received a plurality of channels streams, Aso shows a multiplexer configured to receive a first plurality of channel streams from a plurality of modulators (figure 27, element 1028), which is functionally identical to the

arrangement described by Eriksson. It would be obvious to one ordinarily skilled in the art to combine certain streams as Aso did in the invention of Eriksson in order to properly allocate streams into their channels prior to modulation and improve overall transmission quality.

- b. Regarding claims 3 and 7, Eriksson describes a first up-conversion to a first frequency (column 1, line 56) before a second upconverter converts it to transmission frequency (line 63), and hence it is inherent that this second upconverter is an IF modulator.
- c. Regarding claims 4 and 8, Eriksson describes the use of filters in its transmitting chain (column 1, lines 60-65), and it is inherent that filters in transmission chains are used to perform band-limiting functions.
- d. Claims 5 and 6 reads on the limitations of claims 1 and 2 above, respectively, further, Eriksson describes a transmitter for outputting the summed signals to a receiver (column 1, lines 60-65).

- 5. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramin Borazjani in US patent 5,825,829, in view of Osamu Aso et al in US application publication 2003/0048503 A1. Borazjani shows a plurality of modulators producing a digital upconverted signal of each of the channel streams (figure 8, elements 122n), first and second summer circuits (elements 124, 126), first and second DACs (elements 130 and 132), a quadrature modulator upconverter (element 133), and filter (element 144). While Eriksson does not

show a multiplexer configured to receive and distribute a first plurality of channel streams and a plurality of modulators to received a plurality of channels streams, it would be obvious to one ordinarily skilled in the art to combine certain streams as Aso did in the invention of Eriksson in order to properly allocate streams into their channels prior to modulation and improve overall transmission quality.

6. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gene L. Cangiani et al in US Patent 6,335,951, in view of Osamu Aso et al in US application publication 2003/0048503 A1. Cangiani teaches a plurality of modulator circuits (figure 8, element 84), a first number of summer circuits (element 96), a second number of DACs (Figure 2, element 14), and a second (or third) number of up-converters (element 16), where the second number is less than the first number ( $1 < 2$ ). While Eriksson does not show a multiplexer configured to receive and distribute a first plurality of channel streams and a plurality of modulators to received a plurality of channels streams, it would be obvious to one ordinarily skilled in the art to combine certain streams as Aso did in the invention of Eriksson in order to properly allocate streams into their channels prior to modulation and improve overall transmission quality.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jia Lu whose telephone number is 571-272-6042. The examiner can normally be reached on 8:30-4:30, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jia Lu  
Examiner  
Art Unit 2611

  
DAVID C. PAYNE  
PRIMARY PATENT EXAMINER